ELECTRA

E-3

PROFESSIONAL
LIVE
CONSOLE

OWNERS MANUAL

RELEASE 1.0 WEB

AUDIO ELECTRONICS DESIGN

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ELECTRA

Professional Live Console E3

19 AUX MONITOR / IN-EAR

9 AUX mono (A1-A8,C)
5 AUX stereo (A9-A16, L-R)

MAIN FEATURES

- FRAMES: 32/40/48 Mono + 4 Stereo.
- 16 AUX Sends (8 Mono+4 Stereo/8 Mono).
- MIX BUSES: 8 GRP + 3 MIX (LCR).
- 16 EQ+DYNAMICS 24 bit DSP based (AUX outputs).
- 8 VCA Motorised Masters + 100 Scene&Mute Presets.
- Simultaneous AUX/GRP Functionality: FOH/Monitor/Both.
- 16x8 MATRIX, under digital control for a clear console layout.
- Balanced, Dual Jack Insert points.
- Super EQ on Inputs (H&L vari. Freq+Shl/Peak,2 Mids full parametric
- Cable Test function on each input.
- VCA Solo in AFL/PFL mode. Now, you can listen the VCA group.
- Combo (TM) Input Connectors
- FULL Meter Bridge: LCD+24 x 20 led Bars + 4 Vu-Meters.
- Robust Power Supply with redundant power supply system.

Mono Input

MIC AMP
High performance **Mic** amplifier. BB (TM)

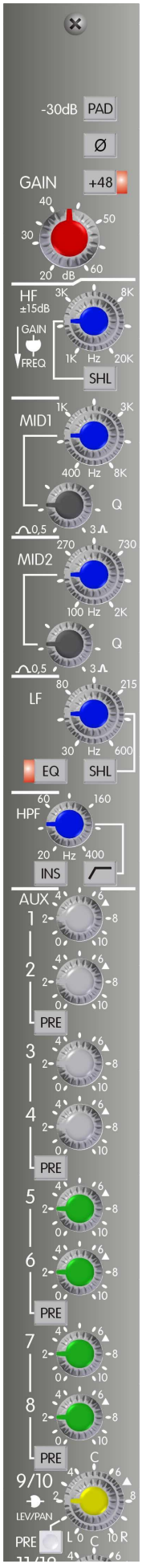
EQ-Section: +-15 dB
HF- Peaking/Shelving
1Khz-20Khz

MID1: Full parametric
400Hz-8Khz // Q-0,5-3

MID2: Full parametric
100Hz-2Khz // Q-0,5-3

LF- Peaking/Shelving
30 Hz-600 Hz

HPF: Variable Freq:
20Hz-400Hz // 12 dB/oct



AUX 9-10
Dual concentric Pots. Normally configured as mono, can be changed to stereo pairs from GRP/AUX Modules. Switchable PRE-POST in pairs.

AUX 11-12, 13-14, 15-16
Same as above

LCR

Dual concentric LCR knob and LCR switch with independent centre send and LR-C image control.

Subgroups assigns can routed pre or post PAN Pot.

VUMETER

Eight segment vumeter and peak leds.

CPU CANCEL
Automation cancel security switch to prevent cpu abnormal operations.

SOLO SWITCH

PFL/AFL function depending of selection on MASTER module. Enables **cable tester** when only one channel is selected. The test must be done with moderate input level. Best results are obtained when PAD is in the off position. Used as **VCA&MUTE** assign switches.

INSERT POINTS

Electronically balanced Send & Return.
Nominal level 0 dBu.

XLR/JACK COMBO
Mic/Line Input. Both connectors in the assembly are paralleled. There is not phantom in the Jack. Set the PAD and Input Gain to adapt Line levels.

Stereo Input

Each console is equipped with four Stereo channels as standard.

MIC AMPS
High performance **Mic** amplifiers. BB (TM)

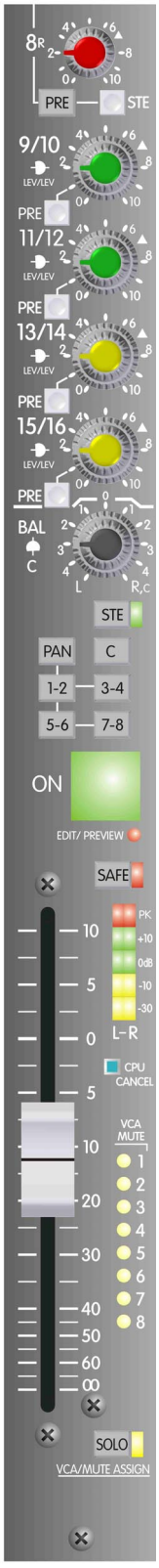
EQ-Section: +-15 dB
HF: Shelving, 1Khz-20Khz

MID1: Full parametric
400Hz-8Khz // Q-0,5-3

MID2: Full parametric
100Hz-2Khz // Q-0,5-3

LF- Shelving, 30 Hz-600 Hz

HPF: Fixed Freq:
60Hz // 12 dB/oct



AUX 1-8
Mono (L+R) Sends, can be switched to Stereo in pairs, Aux 1 sends L, 2 sends R... Switchable PRE-POST in pairs.

AUX 9-16
Dual concentric Pots. Normally configured as mono, can be changed to stereo pairs from GRP/AUX Modules.
Switchable PRE-POST in pairs.

LCR

Dual concentric LR-C knob with independent Centre send and LR Bal control.

GROUP ASSIGN

Eight Groups can be made in stereo pairs. PAN enables post Bal control.

STEREO VUMETER

Eight segment vumeter and multipoint peak in both L&R.

CPU CANCEL
Automation cancel security switch to prevent cpu abnormal operations.

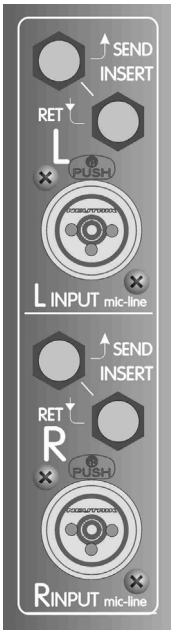
SOLO SWITCH

PFL/AFL function depending of selection on MASTER module. Used as **VCA&MUTE** assign switches.

INSERT POINTS

Electronically balanced Send & Return.
Nominal level 0 dBu.

XLR/JACK COMBO
Mic/Line Input. Both connectors in the assembly are paralleled. There is not phantom in the Jack. Set the PAD and Input Gain to adapt Line levels.



Grp1-8/Aux 1-8

GROUP SENDS
To LR and C Busses.

TB
Selects the Talkback signal into this module.

INS
Enables the Insert connection to take place

ON SWITCH
Automated on/off switch.
SAFE MODE: Press and hold this switch for a few seconds.

SOLO (AFL ó PFL)
Automated SOLO switch.
MUTE assign mode: Press this button to assign the group to the MASTER MUTE.

EQ FLIP. Flips the EQ/DYN section to the GRP

EQ on/off
This switch enables the auxiliary 1 to 16 digital equalisation to take place.

ON SWITCH
Automated on/off switch.
SAFE MODE: Press and hold this switch for a few seconds.

BUS INJECT
To link two consoles.

INSERT
Double insert point.
Balanced jack.
Nominal level 0 dBu.

SOLO (AFL ó PFL)
Automated SOLO switch.
MUTE assign mode: Press this button to assign the auxiliary to the MASTER MUTE.

Matrix1-8/Aux9-16

TB
Selects the Talkback signal into this module.
INS
Enables the Insert connection to take place

SELECT SWITCH
Selects the matrix layer on vca panel to assign the matrix sources: Groups Gpr1-Gpr8, Aux 1-4, LCR and external input.

ON SWITCH
Automated on/off switch.
SAFE MODE: Press and hold this switch for a few seconds.

SOLO (AFL ó PFL)
Automated SOLO switch.
MUTE assign mode: Press this button to assign the matrix to the MASTER MUTE.

GLOBAL MONO/STEREO SWITCH
This switch configures the auxiliaries 9/10 to 15/16 in mono or stereo pairs.

EQ FLIP. Flip the EQ/DYN section to the MTX.

EQ on/off
This switch enables the auxiliary 1 to 16 digital equalisation to take place.

ON SWITCH
Automated on/off switch.
When STO pair is selected, both ON switches are linked automatically.
SAFE MODE: Press and hold this switch for a while.

SOLO (AFL ó PFL)
Automated SOLO switch.
When STO pair is selected, both SOLO switches are linked automatically, allowing stereo AFL
MUTE assign mode: Press this button to assign the auxiliary to the MASTER MUTE in Mute Edit mode.

Master Module

STEREO INPUT
Stereo general purpose Line input incorporating HF/LF Eq LR/C sends and SOLO. L and R switches allows mono input Input Gain: -18 to +7 dB

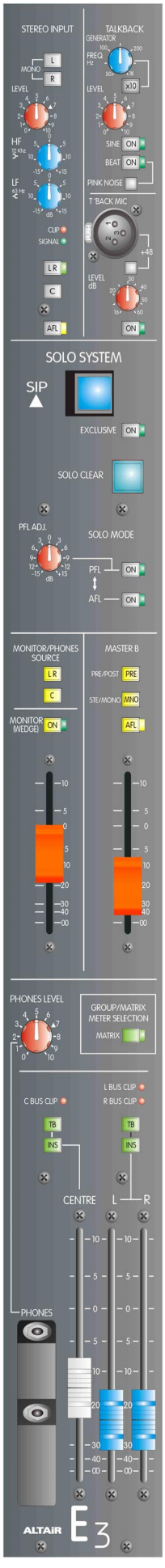
L,R,C BUS CLIP
Bus overflow clip indicators.

PFL ADJ.
Allows level balance between SOLO PFL and AFL in the Monitor and Phones outputs

LR, C Signal Select
Sets the default cue signal when no SOLO is selected.

MONITOR/WEDGE
Stereo Monitor level control. Allows easy control of a Wedge in monitor applications.

PHONES LEVEL
A pair of paralleled Phones output located under the panel for ease phones cord handling.



TALKBACK OSCILLATOR
Sine, pink noise and test signal BEAT. This **BEAT** is a Drum sample, very useful for room acoustics, reverb set up, loudspeakers check or Delay Tower alignment.

SOLO SYSTEM
S.I.P. Solo in place.

Exclusive SOLO: Toggles between individual or SOLO group selections. Set it to Exclusive when using the Cable Test.

SOLO CLEAR
Clear all selected Solos.

SOLO MODE: Selects global mono PFL or Stereo AFL mode on

MASTER B
Additional Master output. Can be set PRE or POST main MASTER.
Very useful to check the mono compatibility of the Stereo LR output using SOLO in AFL and PFL.

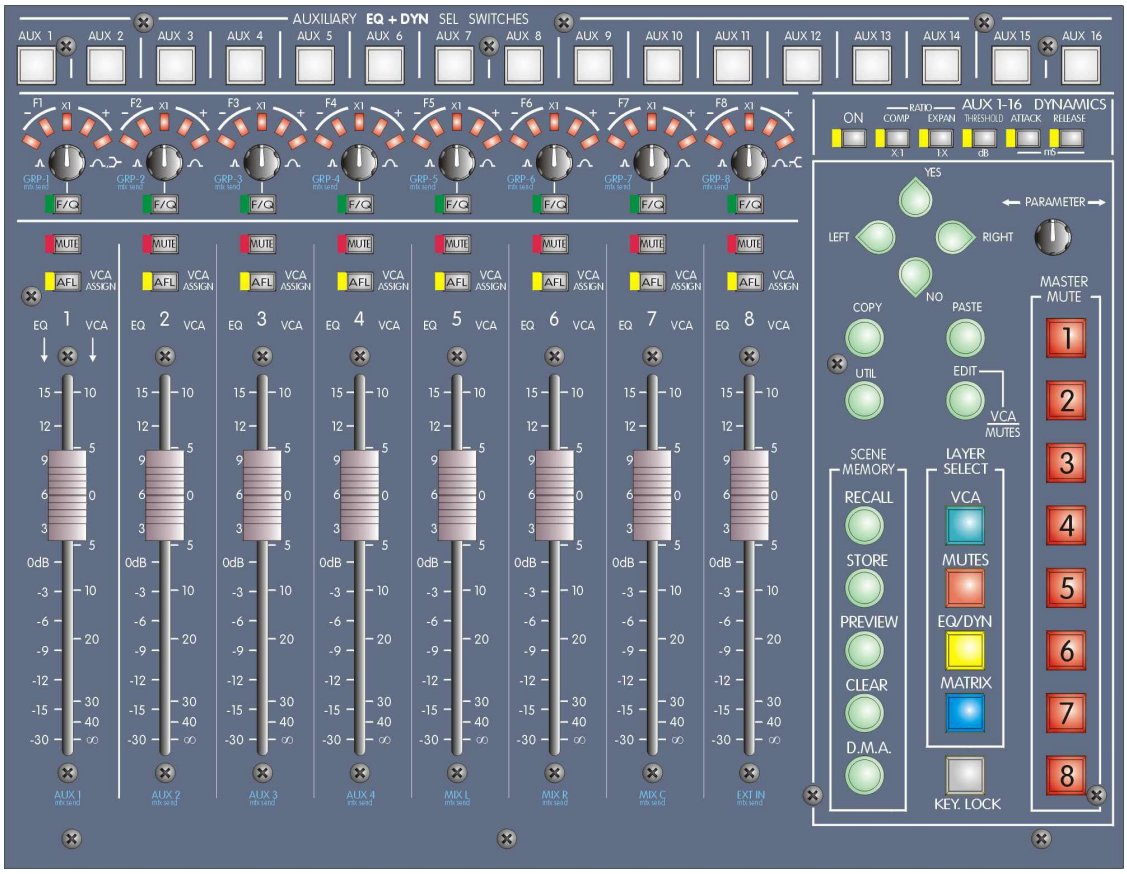
GRP/MTX Meter selector
Right hand meterbridge bargraph selection.

TB
Talkback Signal assignment to LR or C buses

INS
Enables the Insert connection to take place.

LRC
Main Master L-R-C faders.
ALPS 100 mm K series.

VCA/AUTOMATION Section



SEL Switches SELects the Auxiliary output to be controlled in the EQ/DYN layout. Motorised VCA faders jump to the stored EQ positions. Rotary Encoders 1-8 and associated lamps show the relative Frequency around initial Console pre-set points.

F/Q Toggles to Q adjustment in this band. 1 and 8 filter bands incorporate Shelving filter mode.

This layout shows a simple 8 bands graphic-EQ to most users allowing full parametric 8 points EQ with notch capabilities if needed. Initial centre Freq. and bandwidth Q are chosen carefully for easy operation.

Dynamics Blocks: Selected Out Dynamics settings.

VCA Moto-Faders: Normally used as VCA control, serves as EQ and Matrix sends control.

When MATRIX Page is selected, a full view of the SELected 1-8 Matrix output mix shows the 16 Matrix sends: faders jumps to AUX 1-4, C (centre), L, R and EXT in and the Encoders/lamps indicates GRP 1-8.

MUTE This 8 switches Mutes the associated 1-8 VCA groups. The effect is the same as you turn down the associated VCA fader to the minimum or -oo position. The action of this switch can be selected as instantaneous or under confirmation to avoid inadvertent operation. See the UTIL>SECURITY menu explanations below to set-up. It is possible a quick access by double-clicking it.

SOLO This is a powerful listen VCA solo that calls for a mix of all the assigned channels from that VCA group. When selected a VCA solo, the assigned channel's SOLOs will light to indicate what are you soloing.
The listen of this solo can be selected to be AFL or PFL depending of the global SOLO setting.

This function can help the operator to balance the individual levels of the channels of each different VCA groups, and to double check real members of that group of signals.

OPERATION MODES. LAYER SELECTION

VCA Selects the VCA layer. The 8 motorized Faders shows the VCA Fader level. The Fader position is stored and Recalled as part of the Scene memory. In this mode, the assign leds on each input channel shows the VCA group assign.

MUTES Selects the Mute layer. The Fader position remains as in VCA control. In this mode, assign leds on each input channel shows the assigned MUTE group.

EQ Selects the Equalization layer. Fader position shows the level of the 8 frequency bands of the SELected Auxiliary Out. You can edit it in real time or in preview mode.

MATRIX In this mode, you can adjust the Matrix sources (inputs) of the SELected Matrix Master 1-8.

To avoid possible confusion between LAYERS, all the switches and function leds are color-coded. Moreover, you can customize the Layers in the configuration Menu to enable only the ones used in the current show. As an example, in studio production or FOH operation, you only need VCA and MUTES. On the other hand, Theatre or Monitor applications need the EQ and MTX enabled normally.

EDIT MODES.

VCA/MUTES Edit.
This is done by selecting the VCA or MUTE layer, EDIT key, and VCA or Master Mute switch and SOLO assign keys on the input channels. All the sequence is intuitive and is followed by indications on the Main Screen and associated key lamps. It is possible to Edit with the parameter Wheel and cursors as well.

VCA EDIT
-Press VCA key to select VCA layer
-Press Edit key
-Select VCA group 1 to 8 with the SOLO (VCA assign) switches on the VCA Fader panel.
-Select or unselect the input channel you want to assign by pressing the SOLO (VCA assign).
-Press again Edit key to finish.

MUTE EDIT
-Press MUTES key to select MUTE layer.
-Press Edit key
-Select MUTE group 1 to 8 with the MASTER MUTE switches on the VCA Fader panel.
-Select or unselect the input channel or AUX/GRP/MTX you want to assign by pressing the SOLO (MUTE assign) in this module.
-Press again Edit key to finish.

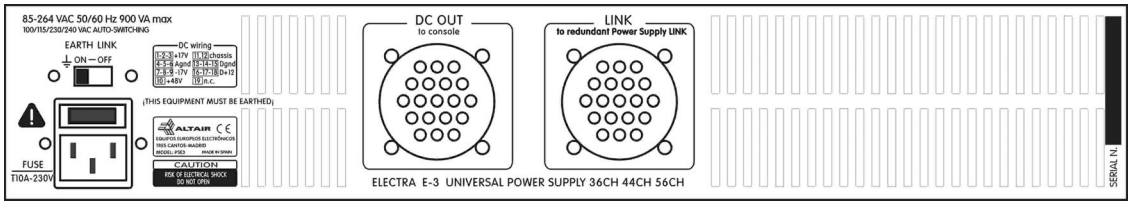
POWER SUPPLY

FRONT PANNEL

INDICATORS.
+17, -17 Volts DC analog rails
+12 Volts logic, Lamps and Fans.
+48 Volts for Phantom Supply
GLOBAL AC Indicates AC presence and normal operation.
GLOBAL DC Monitors all the DC rails and indicates that all the outputs are working correctly in terms of voltage/current specifications. This indicator also monitors the correct internal fan operation.

REDUNDANT CONNECTION
The power supply incorporates 2 power outlet connections: LINK and DC OUT. Connect the power supply #1 LINK connector to the power supply #2 LINK connector with the included 40 cm link power cable.
When you switch on any of the power supplies, all the 4 voltage rail indicators **in both power supplies** will light indicating presence of D.C. power onto the connector side.

REAR PANNEL



DC WIRING

DC wiring

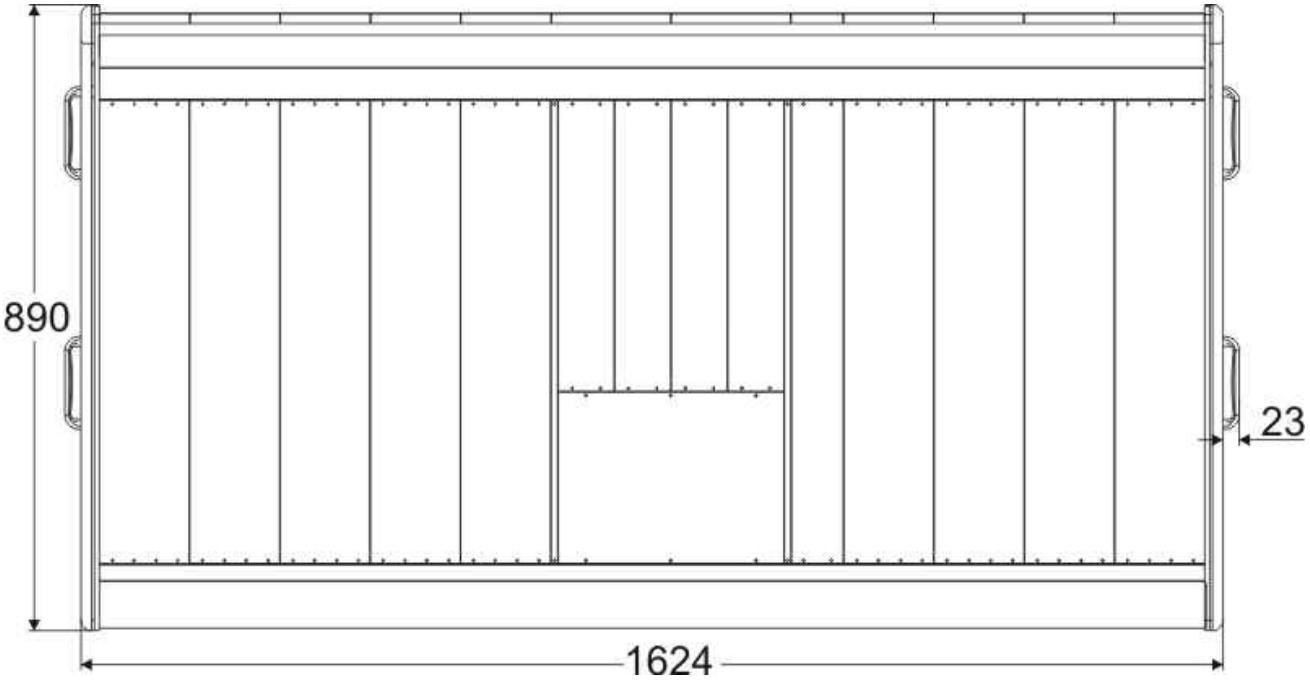
1-2-3 +17V	11,12 chassis
4-5-6 Agnd	13-14-15 Dgnd
7-8-9 -17V	16-17-18 D+12
10 +48V	19 n.c.

SPECIFICATIONS

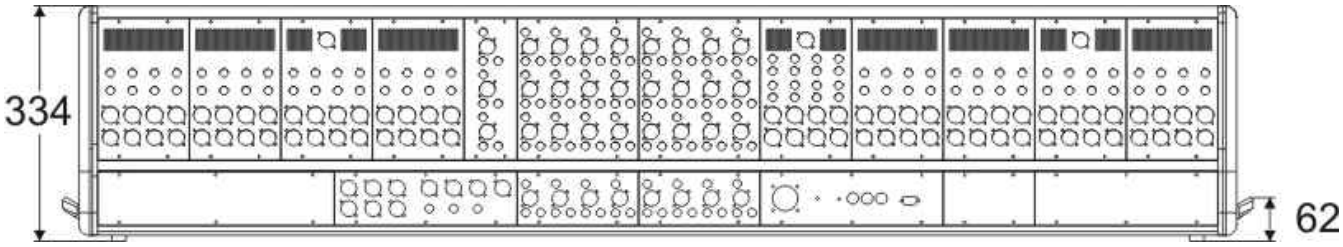
-Input voltage range: 90 to 260 VAC /50-60 Hz. Universal Voltage. Auto-range.
-Power Factor: 0,99 Meets EN61000-3-2 in terms of Harmonic Distortion
-Inrush Current 40 A peak max
-Power output +17/-17 VDC/11 Amp max
-12 VDC/10 Amp max
-48 VDC/1Amp max

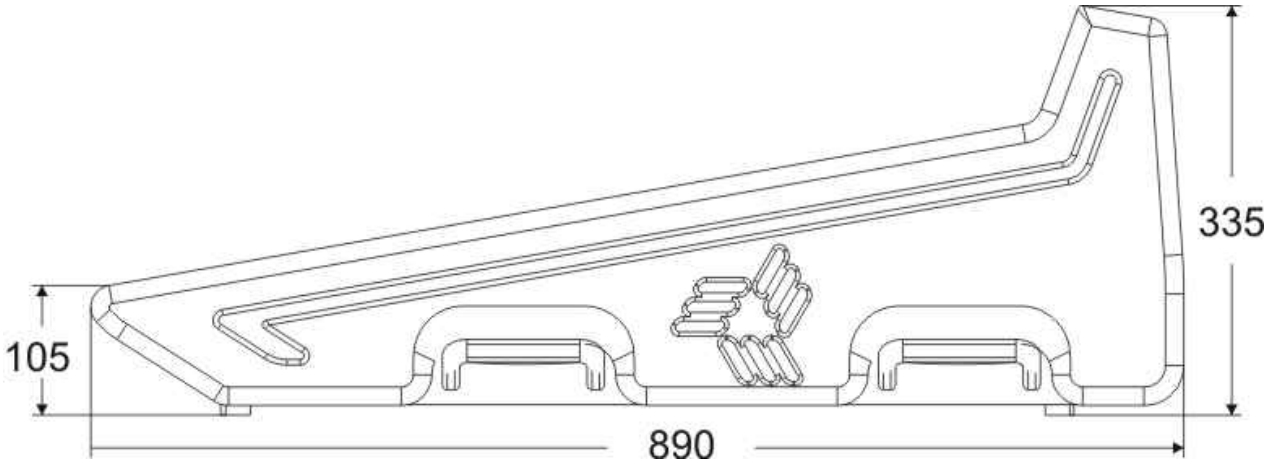
-Radiated EMI: Meets CISPR 22, EN55022 Level B
-Leakge current: 2.0 mA max @240 VAC
-Ambient Temperature Range: 0ºC to 50ºC max
-Dimensions/Weight :2U height (89mmX482mmX260mm) /5Kg un-packed.

Console Dimensions (32+4 CH shown)



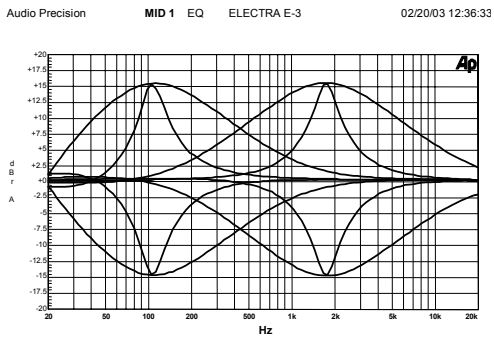
1624 mm - (32+4 channels)
1884 mm - (40+4 channels)
2140 mm - (48+4 channels)

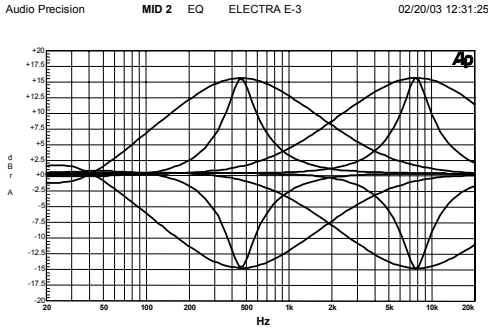


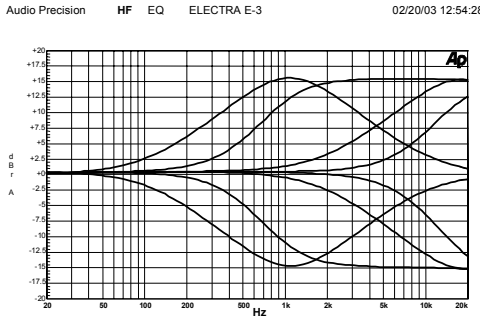


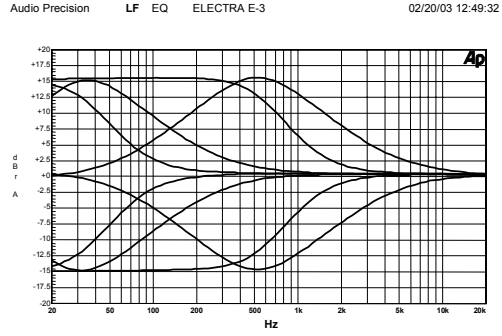
TECHNICAL SPECIFICATIONS	
HARMONIC DISTORTION:	Less than 0,05% from 20 Hz to 20 KHz with -30 dBu input and +4dBu output @ 600 Ohm.
FREQUENCY RESPONSE:	20 Hz - 20 KHz (-2, -0.5 dB), microphone input, 35 dB gain.
NOISE:	128 dBu (E.I.N.), -82 dBu in the L-R output with master to unity gain & 24 channels assigned.
MIC GAIN:	82 dB to L-R, 92 dB to L–R from one group, 82 dB to group & 84 dB to auxiliary output.
MIC/LINE GAIN (PAD on):	52 dB to the L-R output, 52 dB to the group output, 54 dB to aux. output.
CROSSTALK:	-85 dB between groups (1 KHz), -85 dB between adjacent channels (1 KHz).
INPUT CH. EQUALISER:	+/- 15 dB HF - Peaking/Shelving (only SHV on stereo) 1 KHz – 20 KHz. +/- 15 dB MID1 - Full parametric 400 Hz – 8 KHz // Q: 0,5 - 3. +/- 15 dB MID2 - Full parametric 100 Hz – 2 KHz // Q: 0,5 – 3. +/- 15 dB LF - Peaking/Shelving (only SHV on stereo) 30 Hz – 600 Hz.
INPUT CHANNEL HPF:	Continuously variable, 12 dB per octave 20 Hz - 400 Hz. Fixed 60 Hz on sto.
AUXILIARY EQUALISER:	8 bands full parametric/shelving digital equaliser. +15/-30 dB; 20 Hz – 20 KHz // Q: 0,1 –10
VUMETERS:	24 bargraph (16 points) - 4 moving coil (L-C-R-PFL) - Graphic colour lcd display.
POWER SUPPLY:	+17, -17, +12, +48 VDC 600 Watts. Connector for redundancy.
OPTIONS:	Input channel transformers. Lamps. Flight Case. Output transformer.

Input channel equalizer graphs:









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